UNIVERSITY OF PENNSYLVANIA

DETERMINISM AND LAW

WILLIAM G. SCHMIDT

A THESIS

IN PHILOSOPHY

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY

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FOREWORD

The history of mankind has been a long inquiry into the nature of the mechanics of freedom. In particular, individual moral responsibility has always been a prominent factor in the formulation of theories of crime and punishment. Every criminal act is to be explained either as the immediate sequent of an individual's free will or as the natural effect and the necessary result of social and physical causes. Established theories of misbehavior and accepted methods of punishment are predicated of the idea that a crime or a misdemeanor is the free act of an individual who, impelled by motives of passion or avarice, consciously and deliberately contravenes the law. As a free agent he is presumed to be wholly responsible for his own act and is punitively dealt with in a commensurate manner.

Recent schools of criminology, however, regard such views of crime and punishment as untenable in the light of modern psychological and medical research. They maintain that in many instances crime is the result of a pathology of the physical mechanism giving rise to a mental state in the criminal which predisposes him to abnormal and unsanctioned acts. According to these doctrines of philosophical and of scientific determinism, he is controlled by factors that lie beyond his reach. He cannot in any way influence them, and from the standpoint of philosophical determinism such an individual acts merely in response to the laws of original nature, and hence of necessity. On the side of scientific determinism, the controlling influences are the patent facts of chemistry, physiology, anthropology and psychology.

An extreme phase of this doctrine reduces its tenets to a complete denial of the freedom of choice. When freedom to choose is thus negated, moral responsibility vanishes and consequently culpability for the act does not exist. Under these conditions, therefore, the idea of punishment must lapse. This extreme position leads to the view that a man is no more morally responsible to his neighbor for having trespassed upon his natural and legal rights than is a weed to a man for having absorbed from the earth nutritive substances that, had they been assimilated by a rose, would have given him aesthetic gratification. Extreme

scientific determinism would have man played upon only by countless natural and social forces. Every force would be in casual relation with corresponding changes in his physiological organism and, at the very next step, in the inception or the execution of an act. Consciousness, under this view, would only occasionally manifest itself in a series of resulting activities but would be utterly ineffectual in its influence upon their practical values.

This thesis assumes a less extreme viewpoint. It attempts to evaluate the contributions of scientific workers toward the great mass of scientific deterministic factors. It assumes that moral character depends upon an equilibrium of emotional, volitional and intellectual forces. When that equilibrium is disturbed to the point of unsanctioned action or of law-breaking, then the delinquent becomes an object of special consideration and the causes of his abnormal state a matter for unprejudicial study. These causes have been ascertained to a large extent. The physiological lesion or irregularity, social repression or aggravation, the hereditarily transmitted characters are all deterministic factors interfering with freedom of choice. As long as moral responsibility—the crux of penal philosophy—is grounded in freedom of choice and as long as scientific research accumulates evidence for a moderate scientific determinism, the concept of responsibility will become progressively attentuated. Hence every fact bearing upon moral responsibility is pertinent to its meaning and arguable as to its graduations. The serious question is continuously present as to what modifications of the normal organic status and what variations in the mental condition must be demonstrable in order to assert an appreciable change in personality or self-hood and, consequently, of responsibility. To adjudge the acutely insane or the congenital idiot as irresponsible is an obvious reaction, but the transition from a unanimously accepted position concerning these conditions to the precarious judgment of the degree of responsibility of a paranoiac is at the present time marked with decreasing uncertainty as the inquiry into the complex systems of natural and inexorable laws widens. Studies of this character fix the criminal as the product of biological and psychological influences which put him out of harmony with conventional morality and cause him to disclaim the accepted views of community existence. A

delinquent viewed in the light of these ideas becomes the ward of the state for the purpose of curing his impairment and preventing injuries to others. Such are the practical guiding principles which the recent studies in criminology are rapidly making more precise and more capable of application.

I

Intent and Motive

Moral responsibility has been variously defined. In a relatively superficial way there has been evolved the narrow interpretation of liability to punishment. Although every agent is considered free to act, yet he must accept the consequences of his act whether they be agreeable or unpleasant, since his free act is not restricted to himself but invariably affects the interests of others as well.

If he constructs and operates a tanning establishment in the center of a residential section, he has definitely expressed his freedom of action in the investment of his capital and a selection of a means of livelihood, yet he is strictly accountable to the neighboring residents for the presence of a nuisance inhibiting a complete enjoyment of their home life. In this restricted way, the responsibility of the tanner lies in the explanation and the justification of his behavior and in his liability to compensate his neighbors for the damages that they have sustained.

If the individual is responsive to the interest which the community has in his acts and acknowledges this interest in formulating his plans and directing his desires, he becomes a responsible person. If he is indifferent to social demands and recognizes his liability as only a hindrance which he tries to evade, he is nevertheless responsible to the law for the consequences of his acts. But from this rather restricted acceptation of responsibility there can develop a more sympathetic concept of responsible action in which a consideration of the social consequences of executed purposes is expressed and a liability to adjustment, socially comprehended. In this enlarged sense, individuals habitually from their purposes undertake their acts after seriously considering their probable results. Such sensibility to the rights of others and an understanding of the effects of an act upon society are qualities more noteworthy in an agent than the element of mere self-expression. Yet throughout the diverse situations involving liability to penalty or dislike of disapprobation, there is always present the dominating factor of

practical freedom and responsibility. While liability alone is a problem of responsibility in the sphere of legality, nevertheless it is inexpedient to dissociate the legal and the moral aspects of the question. The practical importance of the individual's reaction to the prevailing body of legal rules defining existing institutions—whether in a precise and strictly satisfying sense or in the enlarged manner of the more conscientious members of society—is necessarily distinguishable from the metaphysical aspect of freedom and responsibility as held by the libertarians. The latter not only postulate moral freedom, but hold also to a metaphysical free will. The libertarian will acknowledge in a discussion of responsibility that any particular act is traceable to some antecedent which may be called a cause. But the act which is thus traced, does not exhaust the actual content of one's experience, since the very *act of tracing* involves a cause which in turn involves a third act and an increasing number of similar acts extending endlessly as discrete members of an infinite series of causal factors. In other words, there is always a margin between what one is actually doing and any cause which can be assigned to his act at the next instant. A responsibility predicated of such a view of metaphysical freedom is remote from the practical implications of the term as it concerns the daily activities of ordinary life. Freedom in its practical significance refers to the relationship between volition and some condition existing in the world of consciousness or matter. An individual is free under this definition in so far as he is competent to bring into existence a state of condition or things which he wills to produce; and in so far as he possesses this freedom he can be considered a responsible agent. Accordingly, moral responsibility attaches to the individual as a proper object of moral approbation or disapprobation when the conditions flowing from his act are the product of his volitions.

It is evident, therefore, that moral praise or blame can attach to a voluntary action only, and the question immediately presents itself as to what is the essence of voluntary action. An essential element always inherent in such an action involves an act of the will. Assume that an individual is confronted with two possible actions while strolling down the busy thoroughfare of a liberal

community on a Sunday evening—of entering a church to spend an hour in devotional exercises or of crossing the street to while away some time in viewing a picture show. Both actions lie as much in the future as when he decides in March to reserve accommodations for a European trip in preference to a sojourn in the Maine woods. His ability to accept the one course of action and reject the other is the criterion of his voluntary action. In his acceptance of the European trip he has expressed a desire for a state of affairs to which he has given a more ready assent than to the proposed vacation in Maine. The latter has also made its demands for consideration but the picture presented to his mind has been less desirable. In the case of remaining at home or journeying to Maine, the individual is confronted with either a desire to go or a desire to refrain from going. The conflict is clearly between his assent to undertake the trip and his rejection of it as a future act. Regardlessly of what is ultimately meant by acceptance or refusal, the terms cannot be dissociated from a desire for the existence of a unique condition of things.

Although the voluntary act involves an act of the will or volition, yet it goes beyond the mere acceptance or rejection of a proposed state of things. If a hungry boy sees a ripe apple hanging from a branch, he wills to get it. His voluntary action does not lie only in the desire to possess the apple. There is a conflict of desire to procure the apple with a forebearance (the rejection of his first suggestion) to climb the tree, perhaps scrape his hands and tear his trousers to reach the coveted fruit. The triumph of his desire to get the apple leads to the muscular effort of climbing the tree and tearing loose the object of his volition. His voluntary act embraces, therefore, his initial volition and the effects of consummating his desire. Should the branch break and the boy sustain a serious injury, such a result would be an effect of his act of will. If the apple proves sour and causes stomach ache, such an effect would be attributable to his initial desire. The train of effects emanating from an act of will might well be interminable, but in the commonplace acceptation of such a term the effects would be the natural and the probable consequences of his act of volition. Different agents would foresee greater or fewer effects to their acts of volition

depending upon their maturity of judgment and their richness of experience—conditions that disclose an endless array of environmental, hereditary, and physiological factors.

A voluntary act, therefore, emphasizes the element of foresight. This anticipation of the effects and the results of the act of volition is commonly called the intention of the act. According to Sharp "the intention includes all the expected consequences of the inner process, beginning with the bodily movements. This means not merely those for the sake of which the action was undertaken, but also those which were distasteful or were for any reason objected to, and also those, if foreseen, to which the agent was perfectly indifferent." A fundamental maxim of the criminal law is "Actus non facit reum, nisi mens sit rea." Thus at common law every crime consists of two elements —the criminal act or omission, and the mental element, commonly called "criminal intent." The necessity for criminal intent does not mean that it is essential that the individual doing the prohibited act be conscious that it is wrong, for ignorance of the law is no excuse. However, nearly all of the crimes at common law are mala in se and therefore, to a greater or lesser extent the voluntary commission of the act presupposes a guilty mind. There are, moreover, certain statutory crimes that are exceptions to this doctrine—since a legislature may declare an act a crime irrespective of the element of criminal intent. Indeed, the term intent in law has been strained to meet many demands. Implied intent, presumed intent, specific intent are all ultimately a mental condition that involves a looking forward to results.

But in ethics, as in law, a differentiation between intent and motive is important. Broadly speaking, motive is desire which leads to action. Yet ethical thought has divided on the issue as to whether the motive for an act is that for the sake of which it was done or that on account of which the act followed. To the utilitarian, motive is simply a certain state of consciousness which happens to be uppermost in an individual's mind as he acts. It is, therefore, irrelevant from his point of view to contemplate the subjective feeling existing in the inner consciousness, since the utilitarian is concerned primarily with the external outcome or the objective change, which is made in the common

world. Murder or any felonious act would not be subject to any abatement of disapproval on the ground that the consciousness of the criminal was filled with altruistic sentiments at the time of committing his overt act. Such sentiments or feelings are sometimes vaguely construed by Bentham as unenlightened instincts or sheer impulses on account of which the act followed, but in themselves lacking moral quality. On this view, no consequences could be deliberately wished for or foreseen; and springs of action, on account of which certain results follow would be necessarily beyond the scope of morals according to the opponents of Bentham and his adherents. But the situations are narrowly limited in which motives have no moral quality at all. Much more frequently in human activities a motive must be regarded not as a thoughtless impulse but as a tendency aware of its probable outcome and interested in its resulting effects. Whenever foresight and purpose enter into its purview, there develops a change from blind impulse to a deliberate interest in securing certain effects. Intent and motive then attain to the same moral level. Indeed, certain moralists argue that conduct depends upon the degree to which individuals are actuated by this motive of doing what is right and of realizing virtue or duty for the sake of virtue or duty. But the performance of duty for duty's sake means a special act not for its own sake, but for the sake of an abstract principle. In contradistinction to Kant's theory that a moral act is a means to nothing beyond itself—not even to morality—the hedonist regards a special act as a mere means to happiness. A separation of end and motive, whereby reason furnishes principle as a motive, leads to a moralistic paradox, that the way to get goodness is to cease to think of it and to devote one's self to the realization of the full value of the practical situations of life—a viewpoint comparable with the hedonistic paradox of achieving happiness by forgetting it and devoting one's self to his surrounding fellows and things. In this respect the utilitarian scores his point in distinguishing between intent and motive by attributing moral value exclusively to the former. Accordingly, intent is what an individual means to do; and motive, whether it be that "on account of which" or "for the sake of which," is the personal frame of

mind which indicates why he means to do it. The law accepts the utilitarian dissociation of motive from intent in so far as its relevancy to the essential elements of crime are concerned, but recognizes its pertinency only in tending to demonstrate that an act was willfully done with criminal intent. "Intent is, in its legal sense, the purpose to use a particular means to effect a certain result. Motive is the reason which leads the mind to desire the result" (Dodge, J., in Baker v State, 120 Wis. 145). Or more specifically, motive is that which incites or stimulates a person to do an act. In the cases illustrating this relation of motive and intent, confusion of thought frequently prevents an understanding of the attitude of the courts, although in most instances the stress is clearly placed upon motive as that on account of which an act is done. Accordingly a good motive does not necessarily preclude an act from being a crime.

A fanatical yet sincere parent because of intense religious motives may neglect or refuse to give his child adequate medical assistance in violation of a statutory provision to that effect. On the other hand a wicked motive may not be punishable by law. An individual makes false representations concerning a proposition with a well formulated intent to defraud. His motive is unquestionably dishonest and malevolent. Yet circumstances may develop in such a manner that the original misrepresentation is actually substantiated in fact and no damages are incurred by the deceived party. Although the motive was bad, the act does not constitute a crime.

It becomes, therefore, a matter of interest in ethics as to what shall constitute the object of a moral judgment. Shall moral approbation or disapprobation be evoked by the intention, or by the motive, or by the natural and the probable consequences of an act? In a general way—at least at the common law—the legal position is a demand of both intention and act to set up the framework of an indictable offense. Ethically the emphasis is shifted to the motive or the desire for the sake of which the volition takes place. Such an ethical position can be better explained by the following illustration. If during the unrestrained enthusiasm of a campaign for raising funds for a hospital a man pledges $10,000 at a public dinner, his intention to

help the hospital may be very commendable. There is no denial that the foreseen consequences of his volition will be efficacious to the welfare of the institution. When it is learned, however, that the individual is a jobber in hospital blankets and that his unwonted generosity is an implied and subtle scheme for procuring business, moral approbation of his act diminishes. His intention to benefit the hospital may be bona fide but the real incentive to his act—the motive—to consummate a profitable business deal is nothing but an advertising gesture and is morally judged on that ground. As Bradley has explained, such a desire is a "felt tension in the self." It is this tension that causes the actions of individuals. Not only is the moral judgment directed to the tendency of the desires that are the spring of this tension, but is also aimed at the intensity of the impelling forces. The factors that motivate human activities in all of the myriad incidents of life—their genesis, their vagaries, their twisted and inconsistent expressions—are of transcendent importance in deciding the issues between individuals and in determining their responsibility. Or as Woodworth writes: "A motive is not always clearly conscious or definite, but may be any inner state or force that drives the individual in a given direction."

The older view was that human conduct was deliberate and rational, and on that ground moral approbation and disapprobation with concomitant rewards and penalties were logical and just. More recent views emphasize habit and the physiological nature of behavior. The behaviorist, for instance, maintains that man is born with certain definite patterns of structure and is compelled to respond to stimuli at birth in certain ways that are alike for all. Among these early responses are breathing, sneezing, crying and the like—constituting man's "unlearned behavior." It is noteworthy, too, that this simple list of human responses ignores the principle of instincts recognized by psychologists and physiologists. Indeed, Watson contends that inheritance of capacity, temperament, mental characteristics and talent are only terms of phantasy. Such factors are dependent solely on training beginning early in life; and habit formation consequently becomes the clue to all of the intricacies of human conduct.

Many of the older scientists and even the more recent investi-

gators regard instinct as inherited habit molded by the influences of environment, the struggle for existence and to a limited extent by intelligence. McDougall writes: "Directly or indirectly, the instincts are the prime movers of all human activity." James has explained that the instincts in man are so influenced and modified by inferences, associations and memories—the products of experience—that the original instinctive act becomes less impulsively and spontaneously directed and assumes the character of a purposeful act with definite aims.

There are some psychologists who treat motive in the category of "instinctive tendencies" or "instincts in habit formations." Arthur I. Gates, in his Psychology for Students of Education, argues that an individual has in his original equipment a host of tendencies to muscular, emotional and mental activity. Environment or the body itself constantly furnished stimuli that arouse responses that yield the instincts as well as the acquired reactions. Habits are derived from these instincts and become the means by which native impulses are expressed. "One instinctive trend may conflict with another or several others so that all cannot be gratified. Thus one's desire to accumulate may conflict with counter desires to rest, to secure immediate sensory satisfactions or social approval by immediate display. The impulse to mastery may conflict with the impulse to avoid injury in physical encounter . . . Instincts may be thwarted by acquired habits, ideals, religious beliefs, or social conventions. Beliefs established in childhood, religious and social training, or thoughts of consequences, may inhibit sex impulses. Were these impulses more easily and generally controlled, there would be little need of laws and courts, police and prisons, social taboos and prohibitions. The existence of these institutions and practices is perennial evidence of the conviction that all native activities are not socially desirable, and that many of them must, therefore, be more or less completely diverted or held in check." Although the analysis of Gates is penetrating and plausible and the "instinct" explanation of fear, vanity, leadership, anger and sex is suggestive, yet they fail of complete scientific satisfaction. The urgency of the argument is turned because the abstractions in terms of instinct ignore indifferently the point of view of

physical or mechanical causation. Undoubtedly the emotions affect motives in a determination of the choice of motive and of what motive shall prevail in urging certain acts. That the emotions of fear, combativeness and aggressiveness find their determiners in the glandular secretions of the organism is a suggestive although not completely demonstrable physiological fact. Glueck writes:

> "The motives for all indulgence or abstinence in behavior are derived from emotional tones (pleasurable or unpleasurable, imagery, attraction and repulsion, strivings and counter-strivings). Upon the strength of these feelings depends the intensity of the motive, and, by the same token, the urge for the action. In the battle of motives, the decision rests with the side which possesses the preponderance of affectivity."

In pronouncing a moral judgment, the intensity or the strength of the motive, whether determined directly or indirectly by the emotions, is a dominating factor. Conflicting desires that have been subordinated to the triumphant motive make their demand upon the individual who performs a voluntary act. If these suppressed desires run counter to the accepted criteria of right, the action of the individual is generously approved not only for his rejection of the incentives to wrong conduct but for the strength of the dominant motives that emerged victoriously from the arena of antagonistic inclinations. If "right action involves a determined effort to produce a good result" then in the last analysis, the good agent is he in whom there are volitions that on the average culminate in effects that are wholesome to the individual appraiser and conducive to the welfare of society.

More comprehensively perhaps, moral approbation or disapprobation will look to that elusive quality in the agent—broadly accepted as his character. Hence, it is significant that the factors and the influences that mold character or personality, even though deep lying, remote, and perhaps inaccessible, receive their explanation in terms of physical causation.

II

What is Determinism?

Spinoza asserts that all of the phenomena of the universe arise from the nature of things in the same way that propositions concerning the triangle result from the triangle. The self-hood of man falls under the category of modes of the one Substance, under certain attributes, and is in every respect part of the necessary series. Although men sometimes cherish illusory notions concerning the sequence of the events of which life consists, these empty ideas spring from ignorance. They sometimes deem themselves free because of their awareness of their own volitions and desires and their incapacity for appreciating in their ignorance the causes that lead to the wish or the desire. The fundamental difficulty with Spinoza's system and indeed with all speculative systems is the assumption of a complete familiarity with God and the universe on the basis of inadequate factual knowledge. Thus the conception of rigid geometrical necessity is theoretically imposed on the structure of life from the world beyond. Modern science, however, strikes a less pretentious rôle and inquires into the world of sensual perception and evolves from its critical observation a conception of law and order. This theory in ethics that all moral choice is the determined or the necessary result of psychological and other conditions is determinism. The problem of freedom, accordingly, pertains to a certain field of experience within this realm of law and order. Inquiry into its nature does not begin seriously until absolutistic systems, ignoring the many conditions and facts of life as revealed by scientific observation and reflection, are classified for analysis in other associations; and then the resulting problem becomes restated under the head of determinism. Determinism is therefore a general theory concerning the extent and the application of the field of causation. It makes no assertion of any kind as to the nature of the cause. It does not emphasize environment as against native endowment in the attempt to explain human conduct, or favor hereditary factors against the demands of

environment, or either as against any other conceivable agency operative in the domain of behavior. Even a particular definition of cause is a matter of indifference to the postulates of the theory, since its only concern is with the absolute universality of the causal nexus.

However, that which is determined must not be attributed to fate, an inscrutable Will, a Power that predestines, a blind necessity or an Absolute, from which all things follow. Such a fatalistic attitude is merely an inquiry, a theory, concerning the kind and the mechanism of the ultimate cause in human activities and holds that all determining causes are exterior to the agent. It asserts that man is a sheer creature of circumstances in which a supernatural being can intervene at capricious will to abrogate or disturb the orderly processes of nature and reduce him to the level of an important automaton bound to respond as the master dictates. Obviously such an extreme doctrine is remote from determinism, since all that determinism asserts is that every volition has a cause; and if volition is of the essence of a voluntary action it follows that freedom of behavior must be conditioned by a cause of some kind—in contradistinction to the claim of many moralists that, if freedom is indispensable to responsibility, then volition must be independent of causes of every kind.

Although in a sense fatalism concedes a cause—an external supernatural direction—yet its extreme nature marks it as a harsh determinism completely disavowed by the proponents of modern thought. Evidence from many sources indicates that in a study of conduct the emphasis should be stressed upon the agent himself as the determining cause. Attention should be directed to the circumstances that relate to his character which when fully recognized involves habits, instincts, defects, peculiarities, environmental factors, a personal inheritance amenable to a theory of calculation and yielding data on which predictions of conduct may be founded. It is entirely incompatible with determinism to postulate a capricious, omnipotent being who in the contemplation and the enforcement of his own private aims and whims disrupts the lawful pursuit of an individual's life by thrusting into it motives alien to his specific character and crushing those desires which are an integral part of his nature.

The determinist holds that the character of the agent is the source of the individual volition and is dependent on its interaction with the conditions that beset him at the time the volition is expressed; that this character is of a definite pattern during gestation and at the threshold of conscious life, and becomes influenced by environmental factors tending to strengthen certain potentialities and to weaken other inherent and latent dispositions. As to which factors are more influential—hereditary or environmental—is an age-old controversy in which the respective triumphs wax and wane. Although the interpretation of conduct is divergently expressed, as the one school of influence or the other achieves temporary ascendency, yet in the background of the issue lies the inevitable formula that volition is dependent upon character, and that character develops or shrinks in conformity with the harmonious mechanism of mental and physical law. In advancing determinism as a rational explanation of conduct its proponents seek their evidence from a number of sources—cosmic, sociological, psychological, biological, physiological, etc. They argue that the universe as a system everywhere demonstrates the doctrine of necessary sequences. No phenomenon, however sublime or minute, is without its cause or causes. The swinging of the planets in their orbital paths and the movements of the electrons in a bacterium are uniformly and consistently an expression of an all pervading uniformity of nature. One of the deepest abiding and most cherished postulates of modern science is the law of the conservation of energy. Every transmutation of one kind of energy into another—whether as quanta or grosser molecular activity—is consummated without loss or gain. The failure to refute the validity of this doctrine, the inability to detect breaks in the causal sequences, the explicability of all happenings in terms of prior factors constitute an overwhelming argument that engulfs man himself as a product of this sequential chain. It is inconsistent, repellant, to conceive of a mental act as disrupting the law of energy. The subjective illusion of freedom must yield inexorably to the objective law of causation and man must submissively align himself with the other knowable phenomena of nature.

The position of the mechanistic determinist would be well

taken if the last dictum concerning energy were pronounced. But unfortunately for the stability of such an attitude there are obiter dicta that suggest that even cosmic energy is not a completely knowable concept. In its untiring search for truth, modern physics not only finds the horizon of doubt widen but its quarry of fact recede. And the problem of psychic energy becomes even more unsettled when, occasionally, the familiar laws of classical physics are considered suspended or entirely abrogated as suggested by Bergson or when the suggestion is advanced that the laws of mechanics do not "hold" for the world within the atom.

Social influences also contribute to the same argument that man, his characteristics and his conduct are the results of his social environment. Factors like suggestion, custom, community opinion, imitation and tradition inevitably tend to develop definitely a stereotyped individual who acts consistently and uniformly under the circumstances of life and who apparently has no spontaneity of being but responds mechanically to a formula of action. Statistics gathered in the many fields of man's endeavors tend to show that he is the product of a "group mind;" and his free will, a sequent of social law and order. Although the purpose of sociological inquiry is not to confound the claims of the libertarian, yet the evidence gathered is not only corroborative but accumulative that human conduct closely patterns the requirements of a casual explanation. However, it is a far cry from present statistical averages suggesting that man is the product of his social milieu to the position that moral responsibility, conscience, duty, moral obligation and freedom are ultimately to be interpreted in terms of social factors and that all are determined instants in the sweep of social evolution. Sociology does not presume to plumb the depths of man's consciousness and to analyze his inner life as related to the facts of moral experience. From an ethical point of view, only the plausible suggestion that the individual's moral life is the by-product of the environmental factors of his social conditions can be safely accepted.

The argument for determinism is further sustained by psychological considerations. Research yields evidence that every

mental process has its forerunner in a cerebral action, and mental laws are founded in habit, in sensation, in association and the like. Although conflicting theories obtain as to the relationship of the brain and the mind, the insistent thought in all is the apparent causation of the mental series in terms of prior psychophysical circumstances. Independent decisions, spontaneous acts of the will, unconditioned choices are moments in a history of causal sequences. With a restricted knowledge of the phenomena of consciousness, it is of course impossible to postulate a definite basis for an act of choice. It is likely that choice is in line with habit. At least habit limits the facility and the latitude of choice, since it augments the disposition to follow the line of lesser resistance. And whatever of spontaneity inheres in a choice is conditioned by the limitations of hereditary equipment and circumscribed by the narrow range of opportunity for its free expression. Although it is frequently asserted that "one feels himself free" when he acts upon a given motive, the causal sequence that gives the appearance of a causeless act of the will lies within as well as without the consciousness of the agent. Psychology is unwilling to acknowledge a dissociable ego and clearly identifies conscious conduct as the by-product of cerebral movements.

But the best evidence for the deterministic philosophy is derived from the facts of biology. The tortuous history of biological research reveals that man's character is the ultimate result of hereditary and environmental influences operating through the agencies of evolutionary development—use, disuse, adaptation, natural selection and the like. These factors adequately explain in a mechanical way responses to stimuli, acquired modes of behavior, organic adaptations and developments and prompt the compelling inference that man's mental experiences and moral life can be determined by the same reflexes, by the same factors of the physico-chemical mechanism that apply to the events of the unconscious world. A voluminous literature has presented overwhelming facts and evidence to sustain the relative merits of the claims of heredity and environment in shaping the destiny of man. The transition, therefore, from a mechanical view of life, in which law is supreme, to a deter-

ministic view of moral activity is irresistibly easy but precipitate. For it must be conceded that the invasion of biological principles into the realm of mental events has not sufficiently progressed to preclude all possibility of freedom. There remains a strip of no man's land in which the psychic phenomena resist as yet a ready submission to the precise formulation of the outer world.

From the point of view of the purpose of this thesis the facts and the theories of physiological inquiry offer promising and confirming testimony for the validity of determinism. The laboratory of the physiologist has yielded data concerning the mechanism of the nervous system, the molecular structure of the brain, the factors and the significance of metabolism, the influence of the glandular chain and other associated conditions from which the presumption arises that mental activity is a quasi-passive accompaniment of molecular conditions in the brain. Although cautious physiologists reserve dogmatic statements as to whether consciousness can actuate molecular changes or molecular rearrangements are the genesis of conscious states, yet the scientific view is that mental and moral activity passively accompanies cerebral action and in fact participates in it. That this hypothesis is sound and workable is attested by the endeavors of psychiatrists, specialists and criminologists in their consideration of abnormal types of behavior.

III

Historical Development of the Problem of Freedom

William James has said that there is no subject less worn out, or in which inventive genius has a better chance of breaking open new ground than the free-will controversy. It is a question which has provided throughout many years an arena of dispute in which divergent theories and interests have waged a bitter and unending strife. The relation of man's ability to choose deliberately and to act purposively in respect to his universe has stirred and colored the views of moral philosophers, theologians and metaphysicians in their relentless efforts to reconcile the freedom of man with his outward world of causality. Historically, the question is of engaging interest to the theologian—especially of the Christian School—who, embracing the Divine control of human affairs and attributes and conduct, nevertheless takes cognizance of individual moral responsibility and its sequents. But from the viewpoint of the metaphysician the problem assumes a wider and more incisive range. To him it is a fundamental vexation—an irreconcilable issue between the unsophisticated belief in the undeniable freedom of man and a mandatory deference to the laws of necessity and rationality regulating the physical world. But as science develops its more satisfying generalizations and as the physical universe yields its secrets as hard facts and indisputable order, the protagonists for freedom are compelled to curtail and relinquish their ideas at this encroachment of natural law upon the preserves of human thought and action.

The modern investigations of psychology into the modes and the forms of human consciousness renew discussion of the stability of the postulate of freedom and mark a trend of thought toward unifying the phenomena of the mental realm and the causal relations of the sphere of science. The problem is further obscured or at least becomes more complex in view of other important variants like the endocrinous factors. Glandular influences upon human conduct and personality and valid physi-

ological researches into the mechanism of function are disturbing and realigning the older theological uncertainties and the metaphysical equivocations concerning freedom.

Although the postulation of a precise relationship between the activities of the human will and the events of the external world is incautious and speculative, yet ethics and, in particular, criminology are interested in the incursions of scientific method and achievement into the domain of consciousness that are tending to undermine the dogmas of libertarianism and reassert the pretentious claims of the determinist. When Dean Wigmore pronounces the psychiatric findings in a recent cause célèbre as "sheer determinism," he is not only expressing his impatience at a tampering with the complacent order but is articulating his reluctant recognition of the challenge of new ideas concerning the dualism of mind and matter.

Traditionally, determinism can be traced to the early Greek philosophers. Although it does not emerge sharply as a doctrine for discussion and dialectic, yet there are distinct outcroppings in the thought of the Greek thinkers. Essentially their efforts were directed to a regulative and necessary scheme of world activity—in which the dominant factor was materialism. Only rarely was there a non-materialistic contribution to their world of necessity which in any measure suggested a recognition of the freedom of the human will. Socrates emphasized the moral worth or rational and intelligently-directed conduct. Actions arising from mere whim or caprice are not only unintelligent, but are opposed to the concept of good. In a limited sense Socrates was a determinist since it becomes impossible to act wrongly knowingly. Wrongful acts are the by-product of ignorance. Non-appreciation or recognition of the wrongful character of an act would relieve the wrong doer of liability to punishment for his misdeed although his moral responsibility in seeking intelligent correction persists. In certain phases of law today emphasis is imposed on a knowledge of wrongdoing—or scienter must be one of the constituent elements of legal responsibility.

Plato was influenced by the Socratic inquiry concerning virtue and developed an ethics in which the highest good, subjectively

considered, is happiness. Objectively, the supreme good is the Idea of good, ultimately identifiable with God. Throughout the entire Platonic system, however, there is a conspicuous absence of the question of human freedom with the exception to a reference in the Republic that the human soul is responsible through its power of choice for the destiny with which it meets during life. However, this ability of the soul to choose is conditioned by its knowledge, and a poor choice is necessarily owing to its ignorance and not the sequence of an unqualified selection.

Aristotle also asserted the supreme good of man as happiness. It should be the aim of his existence to live conformably to reason —to live a life of virtue. Virtue, while only one of the constituents of happiness, is the indispensable means for attaining happiness. For Aristotle, moral virtue is a habit of the faculty of choice consisting in a mean suitable to one's nature and fixed by reason in the manner in which a prudent man would fix it. Again the assumption of man's consciousness of freedom is predicated of his knowledge; and limited by this knowledge, he is capable of varying degrees of voluntary action. Ignorance on the other hand invalidates responsibility for acts rising from it, although Aristotle is evasive concerning the degree of responsibility that must attach to voluntary actions resulting from such a freedom of choice. So far as the separation of human volition from natural agency and causation is attempted, Aristotle's efforts are abortive. Although his libertarianism suggests more than a mere inclination toward freedom yet it is restricted to a purposive choice that vacillates between an ultimate selection among divergent moral ends and a selection of a means to an end already ascertained. Even when his ideas of volition and responsibility are renovated and perverted by the Scholastics, they fail to meet squarely the issue developed by the conflicting schools of thought.

The later Stoics and Epicureans saw the problem in sharper outline. The Stoic belief in an omnipresent Anima Mundi and their acceptance of a teleological explanation of the universe, as opposed to a theory of unmeaning mechanism, imposed upon them a supreme reality of duty and its attendant responsibility. On the other hand their doctrine of necessity, according to which

man is only a part of the universe acting through him, developed an apparent contradiction in their position and apparently left no place for real freedom and responsibility. In their reconciliation of freedom with determinism there was evolved a conception of freedom opposed to the capricious liberty of indifference held by the Epicureans. Such a freedom is restricted by law—but a law that is an expression of the inner nature of man and not a formula superimposed from without. What a man wills to do is his own action whether he could have acted otherwise or not; and he is strictly accountable for its consequences.

"But you say: I would like to have everything result just as I like, and in whatever way I like. You are mad, you are beside yourself. Do you not know that freedom is a noble and valuable thing? But for me inconsiderately to wish for things to happen as I inconsiderately like, this appears to me not only not noble, but even most base. For how do we proceed in the matter of writing? Do I wish to write the name of Dion as I choose? No; but I am taught to choose to write it as it ought to be written. And how with respect to music? In the same manner. If it were not so, it would be of no value to know anything, if knowledge were adapted to every man's whim. Is it then in this alone, in this which is the greatest and the chief thing—I mean freedom—that I am permitted to will inconsiderately? By no means, but to be instructed in this: to learn to wish that everything may happen as it does." (Discourses)

At best the Stoic argument for determinism does not advance much beyond a repetition of the universal validity of the laws of causality.

The Epicureans, on the contrary, regarded chance as the real cause of the universe, the explanation of which lay in a universal contingency. They discounted the providential care exercised by the gods—who were so preoccupied with their own pursuit of pleasure and their prosecution of conflict that they had no time for their stewardship of man. Efforts were made by Chrysippus and Carneades to reconcile the idea of responsibility and the doctrine of determinism. There is even a suggestion of the present day view in the argument of Chrysippus that there should be a distinction between the principal and the contributory causes of conduct; and an emphasis upon character or

personality as the compelling factor in morality is urged. Carneades also tried by a subtle psychological argument to mitigate the extreme identification of will with contingency by asserting the rationality of choice, unconditioned by antecedent necessity, as the explanation of human activity. But, whatever their conclusions, the later Greek philosophers were unable to cut their way through the perplexities to a satisfying solution.

An acute appreciation of the irreconcilability of a belief in freedom and a belief in the Divine control of the world was prompted by the rise of Christianity. God's omnipotence and man's moral responsibility became insurmountable difficulties to the development of a unified religious principle in view of the theological explanation of the origin and the nature of the world and the Christian belief in the reality of moral evil. To postulate a complete freedom for man, to empower him with the deliberate choice between good and evil and to hold him strictly accountable for his acts (whether to enjoy a reward or to suffer a penalty) derogated considerably from the supremacy of God and accentuated à dualism that threatened to inhibit the spread of the Christian principles. Among the first of the Christian thinkers to attempt the separation of the inherent moral and theological difficulties in the Christian position was St. Augustine. As a trained philosopher and theologian, St. Augustine was admirably equipped to help establish the Church. He realized that if the Church was to mediate between God and man, then emphasis must no longer rest on the idea of man's freedom. For if God can reveal himself directly in the consciousness of an individual who has the power freely to accept or to reject the revelation then the mediating influence of the Church becomes subordinate. Although St. Augustine did not directly deny the principle of freedom yet he was constrained, if the Church is to be retained as an authority, to transform it into a limited determinism. Loyalty to the church, therefore, forced him to abrogate many of the postulates of libertarianism of which he was an ardent proponent. Accordingly, to the first man Adam unconditioned freedom was granted to choose whatever course he might. To others descended from Adam freedom was denied. Hence when Adam abused his prerogative and apostasized from God,

he corrupted subsequent human nature; and the succeeding race of man lost its power of free action. There then remains only the possibility of redemption by the aid of God's grace—a privilege, since in no instance is it deserved, that can be bestowed or withdrawn without any reference to justice. Accordingly, there arises in the Augustinian system the doctrine of predestination which predetermines every man by his birthright to sin or by God's grace to good, depending on the irrevocable choice of God which the individual cannot appeal nor influence by any display of initiative.

The mediaeval philosophers followed the traditional trend of Aristotle or St. Augustine and arrived at conclusions striking in their novelty and diversity. Thomas Aquinas developed the argument that the will is dependent upon the intellect and, in a truly Socratic and Platonic way, identifies morality with knowledge. In contradistinction to his thought that man is predetermined to act freely except for the anticipatory prescience of God, Duns Scotus developed an opposing argument. In his enthusiam for the principles of indeterminism the intellect becomes completely subordinate to the will in which inheres a power of absolute self-determination. Thus within the Church a conflict between determinism and libertarianism was continuously sustained which was ultimately resolved by its decision for free will and responsibility. In a general way modern criminal law and procedure are based upon this approved theory of good and evil as evolved by the medieval ecclesiastics.

From Descartes through the line of modern philosophers to Kant and Hegel, the problem of freedom is treated from a philosophical point of view. In a brief survey of the question it is not pertinent to suggest more than the outstanding features of a discussion inextricably interwoven into the fabric of metaphysical speculation. Hobbes is prominent as the proponent for a materialistic determinism. The will is identified with a fear or an appetite explicable only in terms of external factors. Wishes, ideals and thoughts are to be interpreted ultimately in terms of atomic and molecular movements in the brain. His argument is forcefully advanced and anticipates in a measure the present day view of the behaviorist implying that human

achievement may rest ultimately in a proton-electron formulation. Descartes argued for a freedom that concedes authority to the doctrines of determinism and indeterminism that the human mind has the faculty of refusing to affirm a truth arising from premises which are not axiomatic. Indeed, merely to assert its capricious freedom, the human mind can choose to reject a proposition that satisfies completely all the requirements of clarity and self-evidence. He admits that the more habitual and reflex actions of man are due to mechanism alone, although even in this respect it is possible for the mind to disturb and modify the activities of the body. Despite the thought that man is largely an automaton, nevertheless this interaction between the mind and the automaton is significant. It is interesting too that such a function of control is presumed by Descartes to reside in the pineal gland—a member of the system of ductless glands of present day interest in their influence upon human behavior. Although, in a quasi-Cartesian sense, his successor Leibniz was practically forced to suppress a belief in moral freedom since the concord of action of the monads is predicated of the predetermined harmony of God, yet he reserves an opinion that man can sua sponte think, decide and act in accordance with the laws of his own inner nature. Leibniz, however, is ultimately a determinist. Spinoza also emphasized that the will is inevitably determined by ideas and its only freedom lies in a control of passions and tempestuous thought through the exercise of reason.

Although Locke did not work out his ethical theory in detail, scattered passages indicate that good and evil are nothing but pleasure and pain. Moral good or evil is only the "conformity or disagreement of our voluntary actions to some law, whereby good or evil is drawn on us by the will and power of the lawmaker; which good and evil, pleasure or pain, attending our observance or breach of the law by the decree of the lawmaker, is that we call reward and punishment." Freedom, therefore, is not that of the will but belongs to the man. If a man wills to do anything at all, to that extent he is free; since whatever act is willed is an embodiment of his purpose.

Humes's thoughts as to the nature of causality necessarily tinctures his opinions concerning freedom. If the necessary con-

nection between events in the physical world is illusory, then the contrast between moral freedom and determinism is illusory. On the other hand if the nexus of happenings in the external world is due to custom or habit, then the inference that a stern necessity rules the actions of man is likewise attributable to custom. In such a scepticism the element of freedom eludes every possibility of definition and analysis.

It was left to Kant to bring the problem of free will to its metaphysical climax. Kant separates the two worlds of phenomena and noumena and postulates the sensuous sphere and the intelligible realm. In the phenomenal world the will is conditioned by appetites, motives, springs and impulses that constitute the empirical self. Such a sensuous self is denied moral freedom because of its dependence upon empirical laws. But the dualism of Kant delivers his system from such a hard determinism. In the intelligible world transcending the phenomena of the sensuous sphere, man is sublimated to the unconditioned privilege of freely accepting the moral mandate of a categorical imperative of *man's own making.* Therein lies man's freedom. In this principle of autonomy rests the unrestricted freedom of obeying the laws of one's own legislation. That man may redeem his highest nature is the rational necessity for a noumenal world but it also establishes the inevitable logical difficulty of reconciling the two divergent worlds of sense and intelligence.

Since Kant, the controversy has been directed along the path of psychological Hedonism and into the domain of biological knowledge. The rise of a scientific psychology has widened and illumined the scope of the problem of freedom. Its achievement has been to subject to searching criticism the phenomena of choice and the assumptions concerning the conative processes. Although not flattering to human conceit, psychology finds that the mind is a bundle of elementary instincts and feelings, possessed in common with other animals, which are aroused spontaneously, and are implanted by nature for the maintenance of the individual and the race. These instincts in man are reduced to obscure impulses which urge him in certain directions, but leave to the unity of himself the decision as to what course to pursue. With his equipment of rudimentary propensities—

self-preservation, combativeness, resentment, suspicion, sex, fear—he is constrained to follow two courses: one destined to maintain the individual, the other to preserve the race. Man follows these paths not because a specific end in nature is served but because such a journey for him is accompanied with pleasurable feeling. When a desire stirs in his mind, it may pass at once into action. But reflection is aroused at the same time and the consequences of gratifying his impulses are weighed and balanced. This act of volition—according to modern psychology—is determined by the external circumstances of the moment and the various desires aroused by them in the man himself. In full consciousness one acts as he chooses, but the choice is limited by his character or those dispositions inherited and followed habitually. Emphasis is placed upon the unity of self—that bundle of habits and attitudes that makes the individual a more or less integrated structure differing from others and designated by the traditional and inconclusive term of personality. This self or the will cannot be isolated from other mental constituents and antecedents, for if freedom of choice be a possibility at all it must be regarded as a prerogative of man's whole personality as exhibited through the development of his character and displayed in his conscious conative processes. Especially must this prerogative of choice assert itself in the crises and the emergencies of life demanding deliberate and serious action.

Since the will is not to be regarded as a separate faculty, it may be applied as another name for the fact of control of action—having its basis in the motor, or impulsive, character of all consciousness. In so far as any set of ideas can be swung into the focus of consciousness and retained there by virtue of the strength and the nature and the number of the connections which have been set up among the various elements of the whole system to which it belongs, that set of ideas will determine action rather than some other set of ideas. Will, accordingly, is only the guidance of action or of thought by means of ideas, and the freedom of this will is at its maximum where action is most fully under the direction of ideas.

To the behavioristic psychologist, however, human conduct resolves itself into different kinds of electron-proton patterns

characterized according to symmetry or geometrical structure and of motions developing when one structural or dynamic form changes into another. In short, personality is viewed under the assumption that the physico-chemical continuum is the sole existential datum and that the totality of the electron-proton aggregates is the universe in which man lives. Freud, on the other hand, pays scant attention to the possible physiological foundations of his views, employing a language which is wholly psychological. He advocates the idea of the subconscious or unconscious mind as an organized and motivated system in all human beings. He conceives the mind as made up of two separate compartments embracing the conscious and the unconscious respectively. Ideas which are obnoxious to the forces controlling the conscious realm are likely to be repressed into the unconscious and prevented from returning to the upper level. In a sense such a repression by the "censor", standing on the threshold between the conscious and the unconscious can be likened to a voluntary action. It may be either a normal part of the individual's development in his social surroundings or may be owing to definite happenings of a disagreeable kind. Probably the most striking repression among the Freudian "complexes" is the libido or sex instinct. This force is of such a compelling nature that efforts to repel its erotic tendency frequently disrupt the stability of sensitive individuals. Since many misdemeanors and criminal offenses are rooted in some perversion of the sexual forces, Freud's analysis of certain forms of misbehavior, in spite of its sensational character, is not devoid of a certain convincing quality.

If the various phases of modern psychology throw light into the depths of the problem of freedom, its difficulties are not necessarily clarified; but new variants and irregularities and inconsistencies are brought into sharper definition and make the causes of conduct—whether they be the self, or the personality, or the will, or the character, or the most impelling motive—difficult to determine and its effects uncertain of calculation.

Concurrently with psychological researches and in an even more zealous and scrupulous manner, there have developed recent biological investigations. Although certain psychologists

decry the efforts of physicists and physiologists to interpret the problems of human conduct and freedom and would reserve them especially for the psychologist with his specific training in the technique of biology and the ontogenetic and philogenetic development of human behavior, yet a certain deference and quasi-authority must be given to the remarkable achievements of scientific research. At all times there have been the eager advocates of materialism who wish to find the only reality in the sensible world. With the lapse of time and the disclosure of function in the factors of physico-mechanism, such a materialism becomes more complex and less mysterious. The incursions of physiological science into the domain of consciousness are difficult to repel and the presumption naturally arises that the valid laws and hypotheses of science are applicable to the conscious processes. The extremists assert that all mental phenomena should yield to the empirical laws of a sublimated matter and its calculable movements. The less complac nt adherents of materialism feel that sufficient evidence has not been adduced to demonstrate that mental activity is solely a product of molecular movement and proton-electron rearrangement in the brain. Such a precise relationship if demonstrable would expunge the postulate of freedom from the category of behavior and eliminate spontaneity and free origination from the physical world.

There is no denial, however, of the attitude of many thinkers that physical factors influence profoundly, if they do not actually control, the psychical state of an individual. In no field of scientific endeavor is this attitude more emphasized than in the critical observations of the influence of the endocrines in regulating human personality and behavior. Certain zealots are willing to attribute all abnormal conduct to glandular irregularity; others, more cautious, readily concede a certain controlling influence of the secretions of the ductless glands upon that assembly of attitudes and habits known as personality.

IV

Aspects of Heredity and Environment

Although environmental influences may be considered as subordinate to the endocrine factors in shaping the personality and the behavior of individuals, yet certain authorities concede their mediate potency in directing human activities. Ordinarily the environment of a person is regarded as fairly constant but it requires little reflection to appreciate that it is really continuously changing and subjecting him to a wide variety of influences. The determinist interested in all of the causal factors that mold and twist conduct accepts contributory aid from all agencies. If he can safely weld the facts of the knowledge of environment into his chain of causation he will strengthen his views concerning responsibility and by the same token undermine the libertarian's theory of freedom. In determining the value of environment in human affairs it becomes necessary to emphasize its dynamic aspects and to suspend temporarily the influence of truly physical qualities. Such a shift in interest is important in a study of childhood problems. For in the shaping of the personality and the behavior of a child during his most impressionable period it is really the attitudes and the ideas of his parents in the home that largely determine what his relationships shall be and mold the character of the home atmosphere as an environment. Companionship with others, childhood jealousies, school room conditions are important dynamic elements in environment that frequently are the genesis of outstanding personality and behavior characteristics. In discussing the case of a sickly boy unable to "put himself over" with his group through his physical inactivity, L. F. Lowrey in a recent paper says:

"Now is it not a fair question whether all of these stimuli from the environment piling up as they have, are not far more important in the determination of his present personality and behavior trends than whatever his underlying biological constitution may have been? Certainly from the standpoint of any treatment program, we have to take these as the dynamic situation with

which we can work in the attempt to alter his behavior. And I believe it can be demonstrated in a good many cases that with alterations in behavior, there develop alterations in underlying personality tensions which determine that behavior and hence we might very well say alterations in the personality itself. Accordingly, these environmental factors in the production of personality trends and behavior disorders seem to me of overwhelming importance if we are actually to understand and mold personality."

There is little doubt that the behavior of man or of any organism is a system of reactions to stimuli. In man this system is called the mind and constitutes his adjustment to the conditions (present, past or future) that he meets and the details of the reactions depend on the stimuli and the conditions that are met. Even H. S. Jennings, an ardent hereditarian, concedes the important rôle of environment in behavior and mentality. The individual behaves differently in the presence of food and in its absence, and in an infinite number of details his behavior depends on the conditions confronting him at the moment of reaction.

Although biologists admit that the genetic factors are immediately traceable to gene combination, yet a diversity of environment is instrumental in developing certain mental and temperamental characteristics. Many details of the present actions of an individual depend upon his past environment, his past experiences. In this respect the study of "identical twins" has been illuminating, even though scant. If twins are born alike and subsequently live under diverse environments, important evidence can be obtained on the ultimate value of environment in influencing their mental activities. The outcome of such an investigation is an acknowledgment by all that marked effects on mental and temperamental characteristics are produced in individuals, even in those that are genetically alike. Some authorities judge these effects to be profound. Shakespeare asserts that "use almost can change the stamp of nature." Bacon also solemnly declares that "custom only doth alter and subdue nature" and "nature nor the engagement of words are not so forcible as custom." The modern behaviorists go even beyond these ancient dicta and hold that all differences in mentality and character among "normal" individuals are due to

diversities of experiences. Modern educational practice is based largely on the belief that the human individual is deeply influenced by the conditions to which he is subjected, and many movements for the reform of the individual or the amelioration of society rest on the same ground. Watson in his behaviorism goes so far as to say: "Give me a dozen healthy infants, well formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, artist, merchant, chief and yes, even beggar-man and thief, regardless of his talents, peculiarities, tendencies, abilities, vocations, and race of his ancestors." But the question may be asked can environmental action induce deep-lying positive changes in characteristics, changes not falling in the category of injuries—like a blow on the head reducing a brilliant individual to idiocy or the impairment of vigor owing to the invasion of disease? The reply of the geneticist is that the interpretations of educators, behaviorists and reformers are not dealing with a genetically uniform population. He argues that although environmental diversities certainly affect the characteristics of organisms, yet genetic factors are even more profound in their influence. He asks how can diversity of environmental influences bring about differences in special aptitudes and abilities. How can environment create artistic ability? How can it bring about the difference between the child that inclines toward a literary career, another that shows special ability in mathematics, and a third whose inclinations are only to sensual enjoyments to the exclusion of all intellectual pursuits? And lastly, there is suggested the fundamental question that goes to the very essence of the relation between individuals in their ability to adapt themselves to conditions under the influence of the environment? Can diversity of environment bring about the differences between individuals that are responsive to environmental influences and those that are not and can adapt themselves only poorly to circumstances? Indeed, the geneticist seriously questions the assertion of Dewey: "In learning habits, it is possible for man to learn the habit of learning."

Although the controversy of the environmentalist and the

hereditarian has surged and subsided throughout centuries, yet the latter has acquired new courage in the amazing development of genetics. The rediscovery of the fundamental laws of Mendelian heredity led to the acceptance of the chromosomes as the determiners of hereditary characters. But it was not long until more Mendelizing pairs of characters were found in certain species than there were pairs of chromosomes. This obviously forced the hypothesis of a smaller unit of inheritance. Morgan and his associates gathered with bewildering rapidity new facts and interpretations in their studies upon the fruit fly (Drosophila) and accepted the gene as the small unit of inheritance carried by the chromosome in which it was found. Although this would account for the association of the genes in a linkage group, it did not explain why different genes in the group should break their association with a definite regularity. From a careful analysis of the strength of association of the various genes in linkage groups, Sturtevant clarified this confusion by assuming that they were arranged along the chromosomes in a definite and linear order. It then became possible to make "maps" of the chromosomes, on which the genes for different characters are not only represented in their appropriate and fixed order but at their proper relative distances from one another. These advances have taken place in the last twenty-five years and have done much to dispel the hazy idea of heredity as some mysterious force, which was passed on from generation to generation in a more or less mystical manner. Such a tenuous theory has yielded to a conception of definite units of inheritance, the genes, which are identifiably associated with certain structures in the cell—the chromosomes—and which occur in prescribed order and position on the chromosome bodies. Furthermore, they are distributed in inheritance in an orderly manner, which allows of mathematically precise prediction as to what the characters of the offspring will be. Unfortunately the complexes of genes of relatively few species have as yet been analyzed with any considerable completeness and the application of their concept to the influence of heredity upon human behavior remains almost as much a mystery as ever. Presumably, however, the gene is of the nature of a specific, complex, organic particle. Jennings has compared

each cell to a chemical laboratory in which the different chemicals are arranged in definite series. The chromosomes may represent the shelves and the genes are the different reagents spread along the shelves in a prescribed order. Or they may be regarded as specific integral living units capable of indefinite reproduction but whose exact nature is not known. The question is often asked how do these genes come into being and where do they come from? And the answer is complacently returned that they arise by mutation or by a heritable change in the germ plasm. "It is as if one of the chemicals on the chromosome shelf suddenly changed in composition or one of the bottles fell off and became completely lost. The effect is the same in either case—the laboratory would be hampered in its operation by the absence of this reagent, at least in its original form."

Fundamentally, this comparatively new science of genetics is interested in the way in which the genes reproduce a new organism like that from which they are derived. Although theory postulates that the genes are transmitted eternally in the germ plasm, yet substantially attested knowledge concerning the development of a being from them is lacking. Thus far the scattered facts show that differences in genes produce corresponding and characteristic differences in the end results—that a tall plant may change to a short, or the red eyes in the fruit fly may become white, or a normal mentality develop into feeblemindedness. In view of these truths, the most important contribution of the heredity doctrine is that which behaviorism denies: the truth that individuals are endowed with different temperaments, aptitudes and diverse modes of responding to like circumstances and stimuli. Or as Davenport has expressed it, "there can be no adequate impersonal science or art of medicine, of hygiene, of education; of any matter that deals with human beings." Such a position is far remote from the caprice of chance but falls short of explaining the actual physical causation of diverse moods, inclinations and actions. Generalizations for the members of a group are untenable, since the nature of the particular individual dealt with must always be taken into consideration. Although the germ plasm carries the genes from one generation to another, yet it is probable that during the

period of gestation, when the child is carried by his mother, owing to ascertained or ascertainable physical causes the endocrine apparatus of the being in utero is disturbed and some gland supplying hormones to the circulation is impaired and some particular chemical may fail to be elaborated or be supplied too lavishly. Abnormalities, eccentricities and irregularities of subsequent conduct departing from the norm are apparently attributable, therefore, to this defective glandular functioning as a proximate cause.

V

Ductless Hormones

The secretions of the ductless glands have produced an enormous literature, partly conservative and controlled, partly speculative and uncertain. The idea that certain secretory products are thrown into the lymphatic and the vascular systems to exercise mysterious influences on the mental and the physical organization has long been held. However, the work of Claude Bernard and Brown-Sequard (1880) so stimulated modern interest that it has recently ramified into many avenues of investigation. It is definitely demonstrable that the ductless glands at least assume a supervisory control of general nutrition, since a complicated interlocking directorate of these secretions dictates a profound regulation of the essential processes of metabolism. These secretions are the chemical products of peculiar groups of cells arranged in definite patterns and forming an unusual type of glands. Their histological and cytological structure, consisting of clusters of secretory epithelial cells abundantly supplied with blood vessels and lacking definite outlets, marks them as distributors of their output to the blood stream. Accordingly, they are known as the endocrine glands; and include the thyroid, the parathyroids, the pineal gland, the thymus, the adrenal bodies, and the anterior and the middle lobes of the pituitary. As still another group of atypical glands, recognition and classification are given to the gonads (the testicles and the ovaries), the pancreas and to a lesser degree the liver. The chemical products of these glands are generally known as hormones because of their stimulating action. However, since some substances are also inhibitory in action the term chalones has been applied specifically to them, reserving the name autacoid for the general class of stimulating and inhibitory materials.

The literature of the endocrines is vast and somewhat inconsistent. The terminology is confused and frequently misleading. It is therefore, reasonable and expedient to adhere to such a precise definition as offered by Weil: Glands conforming to a

definite histologic type, with a structure peculiar to each gland; manufacturing specific chemical combinations and delivering these to the organism through the blood and the lymph channels, producing by means of infinitesimal quantities of these specific substances certain definite effects upon the functions of other body cells, without furnishing material for cell building.

Although the tendency to interpret endocrinous influences in terms of speculative results is pronounced and a zest for endocrinological biographies of Napoleon and Florence Nightingale is difficult to repress, yet the more rational phase of scientific enthusiasm concerning them is a development of unencumbered physiological facts.

The thyroid gland consists of two elongated oval lobes, lying on both sides of the trachea where it joins the larynx. It contains a hormone known as thyroxin which has a definite influence on body metabolism. Injection of tissue containing this colloidal hormone raises the basal metabolism, increases the elimination of nitrogen and develops flushing, nervous irritability and a rapid heart-beat in human beings. It has a marked effect, either directly or indirectly in conjunction with adrenalin on the vegetative system, and especially on the sympathetic system. In cases of hyper- and hypothyroidism there are pronounced effects on the development of bone and genital organs and on the metabolism of nitrogen, glycogen, water and salt. The thyroid receives its nerve supply through the vagus and from the sympathetic autonomic system. It is also known that the activity of the thyroid is correlated in some way with the action of other endocrine organs. The thyroid enlarges at puberty in the woman and manifests an increase during pregnancy and in the menstrual periods. Removal of the thyroid develops a hyperplasia of the pituitary body and removal of the pituitary causes an atrophy of the thyroid. The cortex of the adrenal body exercises an inhibiting control over the thyroid, since an injury to the cortex usually precedes an accelerated activity of the thyroid. Absence of the thyroid gland or an appreciable deficiency of its hormone results in cretinism in man and in lower mammals. In cretins and cretinoid types are found idiocy, dwarfism, pallor and a general failure of development. It is a

matter of clinical observation that thyroxin has a sensitizing effect upon the tissues of the brain. Individuals whose thyroids are overactive are apt to be sensitive, nervous, emotional and high strung. Their mental processes are keen and active. Their physical movements are quick and tense. In cases of hyperthyroidism, both nervous and psychic disturbances appear. If the tissues of the brain of an individual have been sensitized to a point short of definite disease but beyond normal limits, he becomes subject to overpowering emotions, is easily influenced, and has deficient control over his acts.

Although the effects of hyper- and hypothyroidism seem numerous and conditioned, they can be briefly summarized as controlling the flow of life. The speed of living and the rate at which the chemical reactions proceed constitute the active processes of life and are dependent on the functioning of the thyroid gland. Food stuffs and oxygen are consumed more rapidly, the wheels of metabolism rotate more quickly, the individual perceives, feels, thinks and acts more quickly. The thryroid may be well called the gland of energy production.

The pituitary body (hypophysis) consists of two parts—a large anterior lobe of distinct glandular structure and a smaller posterior lobe of nervous origin and composed chiefly of neurolgia cells and fibers. The posterior lobe arises as an outgrowth from the floor of the third ventricle of the brain, the infundibulum and comes into contact with the epithelial pouch forming the anterior lobe. Although the body consists of two different parts, yet they are juxtaposed and fused into an apparent homogeneous entity. From the anterior lobe or the prepituitary, two secretions have been isolated—one dominating the growth of the organism, the other stimulating the development of the sex glands. The posterior lobe furnishes the pituitrins which influence the growth of the nervous and the involuntary muscular cells and control more or less definitely brain and sex tone. The important interests of the pituitary from the viewpoint of this thesis are its interrelation with the sex glands, the suprarenals and the thyroid to constitute a dominating endocrinous directorate and the distinct morphological changes that develop in an individual through disturbances of the gland with their resultant influence upon his behavior.

The adrenal bodies or the suprarenal capsules rest like a cap upon the upper pole of each kidney. Their close connection with the vegetative nervous system is recognizable by the presence of numerous nerve-fibres from the semilunar ganglion, the renal and adrenal plexus, and the splanchnic, vagus and phrenic nerves. Experimentation has shown that the adrenal consists of two organs or tissues whose functions may be very different. For purposes of simplicity they are regarded as the cortex and the medulla. Physiological facts concerning their secretions and their properties are not so definitely established as in the case of the thyroid and consequently a higher degree of speculation colors their possible influences. Observers have frequently called attention to the probable relationship between the cortex and the activity of the sexual glands—possibly because of the resemblance between its cells and the Leydig cells of the gonads. During pregnancy the cortex hypertrophies and, in some pathological changes affecting only the cortex, a precocious development of the sexual organs has resulted. The investigations concerning the medulla, on the other hand, have been more fruitful. The specific hormone—adrenalin or epinephrin—convincingly inhibits the heart action and elevates blood pressure. It affects the metabolism of the carbohydrates in the rôle of an antagonist of insulin. It contracts the blood vessels, mobilizes the blood cells in certain tissues, elevates the blood pressure in selected areas, accelerates the coagulation of blood and has a marked influence upon the other glands of the endocrine chain through the sympathetic, the vegetative and the central nervous systems. Perhaps its most important function is that of motor excitation since it is discharged copiously during periods of fatigue, emotional stress and danger. Adrenalin may be well regarded as the protective mechanism of the body for acute and perilous emergencies—a psychic agency to promote the qualities of aggressiveness and courage.

From the standpoint of determinism the gonads or the glands of sex are perhaps most important and interesting. They are the most primitive of the endocrine organs and since they exhibit no nervous association with the other glands, communication must be established by chemical means. The secretions of the

interstitial cells produce the secondary sexual characteristics in the male and the female and induce the more obvious psychic effects that differentiate the male from the female—the aggressiveness and the positivism of the one as contrasted with the docility and the negativism of the other. In a more subtle way the interstitial hormone influences individual gradations of conduct. In the male a diminution or an excess of the interstitial substance retards or accelerates the behavioristic phenomena, especially those of combativeness and their sublimated variations as personal aggressiveness, self-confidence, initiative and egocentricity. In woman also, influences for the enhancement or the abatement of her unique characteristics are the semi-direct consequences of an over-abundance or insufficiency of her gonadal secretions. It is interesting to note that according to Steinach a recession in the activity of the interstitial cells and their corresponding inefficient outpour of the interstitial hormone mark the advent of advancing age and eventual senility together with a gradual subsidence of the distinguishing indicia of both sexes.

As determinants of human behavior, the thyroid, the pituitary, the adrenals and the gonads undoubtedly have a significance and an influence that place them beyond the range of mere conjecture. The other members of the intricate endocrine chain—the parathyroids, the pineal, the thymus, the spleen, the liver, the pancreas, the choroid—may possess an indirect regulatory control of conduct. For example, the ingestion of insulin, the hormone isolated from the Isles of Langerhans in the pancreas for a diabetic condition, sometimes leads to a glandular readjustment beyond a restoration to stability that disposes toward vagaries of behavior, including the loss of inhibitions and discretion, depression and suicidal intent. But such conditions may also accompany the loss of an eye or the paralysis of a leg. Any extreme factor tending to disarrange the stability of the animal economy and provoking a serious disbalance in the body chemistry may also incite corresponding profound psychic changes in the individual. A development of such situations although of interest and influence is beyond the scope of this thesis.

A casual mention, at least, should be made of the pineal gland

(the epiphysis cerebri), a small outgrowth of the roof of the third ventricle of the brain. Descartes in his book De Homine (1662) described the human body as an automaton driven by a rational soul situated in the pineal gland. Although Descartes' opinion was speculative he was serious in his contention that this small gland at the centre of gravity of the brain was an important factor in controlling the mechanics of the soul. Although the idea is recurrent in later literature, modern researches can only suggest that in some indefinite manner the pineal gland may influence adolescence and puberty, cerebral development and maturity.

VI

Law and Biology

Responsibility, as has been previously mentioned, is frequently explained as liability to punishment. Such a definition is inadequate since circumstances arise when the agent is liable to punitive correction but can nevertheless completely repudiate all responsibility for the situation. Although legal responsibility may well apply to a certain act, and punishment be an inevitable and just sequence, the broader question of moral responsibility frequently reaches beyond legal obligation and penal necessity. Moral responsibility is fundamentally concerned with the application to an agent in his voluntary actions of moral approbation or disapprobation. Although the moral judgment emphasizes the nature of the anticipated or foreseen effects, it is nevertheless intimately linked with the volition that started the chain of consequences. The agent to receive moral approval or disapproval for his act must be free to bring into existence the state of things for which he is held responsible. Freedom of action and independence of necessity are the criteria and the basic requirements for moral responsibility. The end or the state of things brought about by the action of the agent must be the result of the volition or desire adopted by his will or by the self as a personality.

Moral disapprobation of an act frequently merges with legal liability, if the act is in violation of the criminal law thrown about society as a protective cloak against the unsocial behavior of some of its members. When an individual has been convicted of an offense against the welfare and the security of the social group he must be punished. The theory of the law is that a severe punishment will deter others from committing like crimes. This theory of punishment has come down through successive generations and is based on vindictiveness but is superficially disguised as retribution. At the common law men were executed for minor offenses by being strung up on gibbets and there left to dangle at the crossroads. Other extreme forms of punishment were used, yet poaching, thieving and like crimes flourished as much as ever.

Originally individuals were classified as good and bad. "The good included the pious, the proper, the fatuous, the harmless, the conventional, and the inconsequential. The bad included the heretic, the delirious, the anarchic, the antisocial, the not-understood, the nonconformist. There were Alexanders and Cotton Mathers and St. Pauls among the former, and Galileos and Neros and Guiteaus among the latter." The "bad" class gradually became subdivided—those whose wrongdoing involved more or less social condemnation, but not meriting legal consequences and those whose offenses were of greater enormity and incurring the term of criminals. "The old theories of crime were theological in origin. Because sin, which is a bad emotion, so often led to crime, which is a bad act, mankind, until recently, almost universally believed that a criminal was simply a sinner who did not use the grace of God to repress his sinful desires, but translated those desires into hurtful acts, which are crimes. Certainly this was the belief of all those peoples who derived their ethics from Judaism and Christianity." Moral and theological precepts were the basic ideas in this school of criminology. It accepted unreservedly the principle of freedom and the equal responsibility of all. Since all individuals were free and unrestricted, the same offense must always receive the same punitive treatment. In thus focusing attention upon the crime and not upon the individual, future offenders were to be deterred by force and intimidation.

It was not until the latter part of the 19th century that a distinct change developed in social thought toward the criminal class. Cesare Lombroso and his supporters Colajanni, Ferri, Garofalo, etc., advanced the theory that criminals are a special physical type resulting from degenerative heredity. Lombroso observed that the criminal does not necessarily offend against the laws acceptable to his fellows simply because he is ignorant, unschooled in moral precepts, irreligious or consciously rebellious. He noted that many confirmed criminals were men of excellent education and considerable accomplishment and often of some culture. He also saw that other extreme offenders had been children whose childhood had been replete with preachments of morality and probity, whose youthful experience had

been free of the taint of vice. He concluded, therefore, that there must be some fundamental defect, probably inherited deficiencies or malicious peculiarities that impelled the victim to a career of crime whether he wished or not. Lombroso with intensive and extensive elaboration developed a thesis that criminal behavior is ultimately a biological and anthropological problem—in which heredity, race and climate are the foremost determinants of the wrongful propensities. The researches and the accumulation of facts throughout a lifetime eventually crystallized in his enunciation of the anthropological argument that virtually the criminal type is born and not made—and that it can be differentiated from other types according to well marked cranial and cerebral characteristics, bodily defects and abnormalities. Although in his early thought Lombroso was disposed to believe that all criminals conform to this specific type, his later work indicates a modification of this positive position. Approximately 40 per cent of the offenders whom he had the occcasion to observe and study were typical criminals—responding fully to type—and the others were incomplete or only partly stigmatized types. What particularly interested the students of criminology was the category of precise physical characteristics under which the criminal was subsumed. He was to be identified as possessing various physical or anthropological characteristics, as a misshapen or unsymmetrical cranium, simiosity, sparse development of the beard, prognathous jaw, animal-like peculiarities in dentition, insensibility to pain and nervous excitants and the like.

These qualities according to Lombroso are hereditary and explicable as forms of atavism or degeneracy and the conclusion became obvious that the criminal, because of these inherent defects, had no conscious control over his incorrigibility. An individual responding to a majority of the stigmata of physical deficiencies was inevitably led to criminality in spite of his desire and will to act otherwise, unless his social environment was strikingly good and sufficiently competent to suppress his innate tendencies.

It is now generally conceded that Lombroso was wrong about his criminal type. Criminals are of all types, since the reason for crime is more deep seated than superficial physical charac-

terization. Nevertheless, Lombroso's theory aroused a storm of protest and criticism. His idea that men became criminals because they had inherited certain physical defects was savagely attacked, because the capacity for sin implies that the sinner has free will, or the power to choose his course between the alternatives of good and evil. And free will is a religious doctrine, which in logic supports the whole structure of punishments and rewards promised in hell and heaven. If sin, manifest in crime, were accepted as the result of an inherited physical defect, the whole structure of theology (so its defenders felt) would topple over, because the sinner could not be charged with personal responsibility for his sin. "He 'couldn't help' doing what he did." (Strother, The Cause of Crime).

Yet the value of the Lombrosian doctrine lies not in its particular claims and explanations but in the general attitude advanced. Crime was no longer regarded as a mere social phenomenon but the root of its causes penetrated to the anthropological and the biological sciences. Whereas the emphasis of cranial and physiognomic deformities alienated friendly criticism of the opinions of Lombroso, yet when attention is withdrawn from these indicia and stigmata of the so-called criminal type to the more fundamental characteristics of the problem of misbehavior and faulty conduct, it becomes apparent that Lombroso's ideas inaugurated a more critical interest in and a more objective approach toward a study of the factors controlling human actions.

It has long been prescribed that crime, whether the conscious act of a malevolent and premeditating wrongdoer or the ineluctable consequence of a disturbed chemistry in the mother of the offender at the time of gestation, "should be followed by officially inflicted revenge, called punishment. The idea was advanced that this revenge would do some good, in that it would frighten this particular and other potential criminals from repeating the offense. The idea that back of such behavior there should exist a complex of physical, chemical and psychological springs which are infinitely more painful than any such blundering punishment never occurs to these sentimentalists. The idea that a person may commit a crime without having the

slightest conscious idea of why he does it, or with an entirely erroneous idea of why he does it, never occurs to them. The fact that the syphillis of the brain of a paretic criminal is more likely to be cured by arsphenamine than by ten years in prison never occurs to them. The fact that a woman with a mind of an eight-year-old girl cannot adapt herself to the social demands of society without assistance is never considered, either by the hard-boiled gentlemen who want to cure prostitution by life imprisonment or by the other type of sentimentalists who want to save their souls by rescue missions. These people attack the problem with their emotions—hard or soft—rather than with their intellects." (Coffey v Hailan, 204 U. S. 659)

It becomes necessary to emphasize again the importance of intent in connection with crime, since in every crime there must be a concurrence of the act and the intent. To convict and to punish an individual in a criminal proceeding, it is imperative to show that he had a mens rea—or guilty mind—at the time the act was committed. If the criminal intent is negatived because the mind is disordered, then the law adopts a modified procedure.

Under the common law an insane person was incapable of committing a crime and therefore not responsible for his acts. Blackstone says:

> "If a man in his sound memory commits a capital offense and before arraignment for it he becomes mad, he ought not to be arraigned for it, because he is not able to plead to it with that advice and caution that he ought, and if after he has pleaded, the prisoner becomes mad, he shall not be tried; for how can he make his defense?"

The law notoriously lags behind scientific achievements and social advances in exercising its stabilizing influence upon the status and the customs of society, yet inevitably although slowly reflects the sounder elements in the complexity of newer thoughts. Accordingly, tests to determine the responsibility of the mentally deranged have been evolved since the early common law. The "counting-twenty-pence" test of Fitzherbert the "14-year-old child" test of Hale, the "wild beast" test of Tracy, and the

"insane delusion" test have all been rejected together with many definitions and ideas of mental weakness and incompetency. The "right and wrong" test became permanently established in the law of McNaughten's case in 1843. In brief, McNaughten, having the delusion of persecution and believing that he was being harassed by his enemies, shot and killed Drummond, the private secretary of Sir Robert Peele, probably mistaking him for Peele himself. The verdict was "not guilty on the ground of insanity" in view of the application of the "right and wrong" test. The essence of the opinion is:

"Assuming that your Lordships' inquiries are confined to those persons who labor under such partial delusions only, and are not in other respects insane, we are of the opinion that, notwithstanding the party accused did the act complained of with a view, under the influence of insane delusion, of redressing or revenging some supposed grievance or injury or of producing some public benefit, he is nevertheless punishable according to the nature of the crime committed, if he knew at the time of committing such crime that he was acting contrary to law; by which expression we understand your Lordships to mean the law of the land . . . It must be clearly proved that, at the time of the committing of the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or, if he did know it, that he did not know he was doing wrong. The mode of putting the latter part of the question to the jury on these occasions has generally been, whether the accused at the time of doing the act, knew the difference between right and wrong."

This test has been followed in thousands of decisions in England and America and illustrates a widely recognized landmark in the progress of determining responsibility for an act.

In some states evidence may be adduced to show that the defendant acted because of an "irresistible impulse" and not as a free agent. In a well-known opinion (Judge Dillon) involving this test there is stated:

". . . But, if, from the observation and concurrent testimony of medical men who make the study of insanity a specialty, it shall be definitely established to be true, that there is an unsound condition of the mind, that is, a diseased condition of the mind, in which, though a person abstractly knows that a

given act is wrong, he is yet, by an insane impulse, that is, an impulse proceeding from a diseased intellect, irresistibly driven to commit it, the law must modify its ancient doctrines and recognize the truth, and give to this condition, when it is satisfactorily shown to exist, its exculpatory effect . . ."

The irresistible impulse test has not met with a unanimity of favor. Frequent attempts have been made to disparage its application when the more obvious "right and wrong" test cannot be readily employed in behalf of the defendant. The law attempts by punishment to compel people to control such impulses as lead to its serious breach. "If you cannot resist an impulse in any other way, we will hang a rope in front of your eyes and perhaps that will help." (Hoag and Williams, "Crime, Abnormal Minds and the Law")

In a recent leading case (State v. Buck, 219 N. W. 17) the Iowa Supreme Court held that irresistible impulse is not such insanity as will relieve from responsibility for crime, unless it can be supported by the right and wrong legal test. The court affirmed its belief in the "comprehension and consequence rule". The facts in this case are briefly: the defendant and her husband were breakfasting together in the kitchen where there was a pint jar containing some gasoline. The defendant arose, lighted the gasoline and threw the burning fluid over the neck and shoulders of her husband who was sitting with his back to her. She said that, when she went to the sink, "everything turned black," and she remembered nothing of what happened after that. The husband died several days afterwards. The defense was that she was "a psychopathic personality of the excitable type". Although evidence was adduced to support this contention, the jury found her guilty and the Supreme Court affirmed this verdict. It said:

"Outrageous and hideous crimes are often committed. Sometimes it is difficult for humanity to understand why sane men will perform these acts. Certain psychologists and medical experts believe that no mentally balanced man can be guilty of such atrocity, yet, in the application of criminal law, it is necessary for courts to adhere closely to human experiences and the consensus of opinion drawn therefrom. Until some more scientific method is devised by legislation, this must be the policy of criminal jurisprudence."

The history of jurisprudence concerning its attitude toward intent and mental disorder has been confused and tortuous. Insanity of an unquestionable type has long been recognized as negativing criminal intent; but the law becomes less yielding to mental and emotional derangements that are not ordinarily amenable to ready diagnosis and definite identification. As Stephen indicated long ago criminal intent is a vague legal concept. It involves a certain mental condition that is ever varying and ever involving new and different methods of diagnosis and treatment as scientific medicine and psychopathology develop. The problem would be simplified for the courts if more attention would be given to the question of responsibility. Although determining responsibility for any act is difficult at best, yet promising progress has been made along the lines indicated by modern science. Dr. Charles W. Burr (Crime from a Psychiatrist's Point of View) says:

"Lawyers on the one hand and psychiatrists on the other, have been using the same words to mean different things. The legal definition of crime is simple . . . Psychiatrists contend that the legal definitions are arbitrary unscientific, and untrue. They maintain that criminality is a state of mind that there are a certain number of people, who, either because of inherited or congenital twists in mental make-up, or from acquired disease, are so unlike the rest of the community in which they live, that they are asocial and hence criminal; that there are people who cannot be taught a sense of duty toward their fellows, people who are morally color blind; that a man may be a criminal and yet never commit a crime, because his environment is such that he can satisfy all his desires without coming in conflict with the law, and finally that, putting to one side the question of free will in normal people, the criminal is so controlled by emotional impulse that reason plays a very minor part in his life."

In his "Manual of Psychiatry" Dr. A. J. Rosanoff asserts that the current conception of crime is based on the metaphysical theory of the freedom of the will which is guided by ethical principles and is the precursor of responsibility for acts of behavior, but that the psychological or scientific conception of responsibility is different since it is dependent upon a natural law determined by heredity, educational influences and environ-

mental factors for the most part beyond the control of the individual. Dr. Rosanoff deprecates the element of retribution in the present day treatment of crime as seen in the emphasis that the court places upon the determination of the degree of guilt of the accused. "As long as such is the case, it seems to us, psychiatrists cannot consistently take part in the proceeding".

Numerous cases and many authorities can be cited to demonstrate the reluctance of the law to follow the newly-disclosed principles of scientific research. The inadequacy of the traditional tenets of law becomes increasingly evident in civil as well as in criminal practice. Not only are intent and responsibility important to the criminal lawyer, but similar problems of a scientific nature arise in automobile accidents, testamentary capacity, divorce, bastardy, breach of promise and other situations necessitating the element of soundness of mind. But in one respect a definite stride forward has been made. The power to distinguish and choose (whether determinately or indeterminately) between right and wrong refers not to conduct in general but to the specific act charged as crime at the time of the commission. The criminal responsibility of the agent depends upon his mental capacity with reference to the particular act with which he is charged at the bar of justice. To this extent at least, the inquiry is not generally that of crime but is individualized in respect to the offender.

From the deterministic point of view, therefore, the tendency to explain the vagaries of the mechanics of behavior is acquiring increasing momentum. It has been observed that the hostile schools of hereditarians and environmentalists stoutly argue for the supremacy of their views. To promulgate successfully any cause or doctrine requires an unbridled enthusiasm, an ardent enthusiasm that is incautious and often unmindful of the merits of the contention of a conflicting group. Although the philosophy of eclecticism is apparently discriminating and rational, such a mode of thought is not conducive toward accelerating the basic ideas of a specific theory. The adherents of the school of functional disturbance contend that with few exceptions abnormal individuals —the wanderers, the vagrants, the social and domestic failures, the eccentrics, the eremites, the incorrigibles, the pathological

liars, the phobiacs, the inverts, the homosexuals, the criminals—are the products of disordered emotions based upon defective human chemistry. Functional disturbance is the term applied to this derangement of the working process in the cells of the nervous system and the ductless glands. The assumption is that the brain and the other centers of the nervous system are normally formed or developed but that, owing to chemical disbalance in the blood and lymph, certain groups of cells cannot perform their work in a healthy manner—that they function abnormally. The probable cause of such a chemical upset is a glandular malactivity in the mother at the time of gestation. The result is not a gross and obvious monstrosity or deficiency in the offspring owing to a serious disbalance, but a less marked distress of the mother and a correspondingly more subtle affliction of the child. In a general way, these functional irregularities are traceable to a prenatally influenced unhealth of the glands in the child. Although an imperfect brain does not follow in the case of the less obvious instability, nevertheless the children subjected to such influences during the period of gestation possess a deficient endocrine system. Frequently these functional disturbances are so elusive as not to manifest themselves in childhood. In later life, when stress and emergency come into experience, the deficiencies are brought to an acute focus. Adolescence with its profound disturbances brings many into evidence. The climacteric in women often induces their fruition. The toll of disease, the disappointments and the anguishes of life often reveal their suppressed presence in individuals. One conservative attitude attributes functional disorders to the shocks and strains of later life or to adverse environmental conditions in general. Another conservative claim is to censure a long line of consistently weakened ancestors for the acute disturbances in the individual. But evidence has been adduced to demonstrate that the defects have been more prevalent from infancy than is commonly believed. Frequently parents and physicians disregard symptoms in young children which are clear indicia to the neurologist of glandular troubles. Unwarranted peevishness and unaccountable disobedience and incorrigibility in a child are often complacently exonerated as temperament but may validly indicate the need of hormone adjustment.

The manner in which functional disturbances abnormalize human behavior and lead individuals of sound cerebral equipment to wrong doing and criminality has been carefully developed by Loeb, Cannon, Crile, Dercum, Child and others. But such an exposition is intricate and technical and except for a few fundamental remarks is not germane to the immediate purpose of this thesis. Data from the external world pass as incoming impressions through one or more of the sensory gateways. Other impulses also come to the brain through the sympathetic nervous system which controls the vegetative functions of the body, such as the salivary secretions, intestinal activities and the action of the endocrines. An impression from the outer world passes from the sense organs to the percept centers and thence to the association centers. The impulse then moves quickly from the association centers to the concept and the emotional areas where, with certain memory impulses aroused in the association centers and the subconscious area of the mind, a concept is formed. In the meantime, however, part of the original impulse has also passed from the percept centers to the opposite or emotional center of the brain, where feelings are aroused. These emotions clash or combine with the impulses from the intellectual side of the brain which often act inhibitively. If the emotional impulse is sufficiently strong, the individual will act responsively to his feelings. If not, the intellectual phase of his mind will control and he will act measuredly or more reflectively. Or his response may be according to his feelings, somewhat tempered by his intellectual control. In any case, the original impulses must pass from the emotional and intellectual centers to a third great brain part, the motivating center, from which the activating impulse flows off. This impulse causes the man or beast to run, to fight, to eat and the like. Unfortunately for the precision of this explanation the various centers have not been definitely localized, although the percept areas have been delimited with a fair degree of spatial significance. In particular the emotional area has eluded localization in spite of numerous fascinating biological efforts to seek it in the phylogenetically older section of the brain. Nevertheless, it is valid to recognize in theory at least the opposite sides of the mind, the emotional and the intellectual. It is conceivable

that the former is the focus of feeling, passion, excitement and stress and that the latter serves as a control system. It has been reasonably advanced that the intellectual center in more primitive creatures was no more than an inhibitive organ—a storehouse for the first primitive memories, since fears and inhibitions are based on the experiences of the creature. In man these memories have, necessarily, become manifold and endlessly complex and have promoted the growth of the capacity and the importance of the intellectual side. For it is in this side that present impressions are hooked up with the memory of past experiences and associations in order to form concepts, to think and to ratiocinate. It is the function, therefore, of the intellectual brain to influence the emotions and to restrain the impulses flowing from the emotional center. This ability of man to regulate and guide his feelings and inclinations along the paths marked out by ethics is the basis of the theory of free will. Should the intellectual center become diseased or disordered then the emotional side is unleashed from its equilibrating influence and its activities may develop in an unrestrained and rampant manner. On the other hand if through any causes the emotional section should be deranged, then the disturbances in this center become the immediate cause and explanation of many types of abnormal behavior. A consideration of how these disturbances develop ultimately involves the intricate mechanism of the function of individual nerve cells and the nature of the transmissions of the nerve impulse. In nearly all animals the nerve cells are specialized in the direction of efficient conduction. They consist of central nucleated portions giving rise to fine protoplasmic extensions leading out in various directions and fusing at their tips with similar extensions from other nerve cells and the resulting continuous net work is commonly known as the "nerve net". A consequence of this protoplasmic continuity is that disturbances anywhere in the net tend to spread widely through it. In fact, they will spread to all parts except as their passage is blocked by some means or other. An organization which provides for the restriction of conduction to definite paths and yet at the same time offers a rich choice of paths is present in the higher animals and is generally known as the neuron. Physiologists have used the delicate ac-

tion current, which accompanies all functional activity in nerves as the criterion for a study of the conduction of the nerve impulse. There appears to be no doubt that the potential differences causing the "action current" are fundamentally related to nervous functioning; and much of the present day knowledge of nervous action has been established by experiments in which the action current has served as the index of activity. Stimulation, electrical or otherwise, of the nerve cell is pictured as increasing the permeability of its equilibrium membrane, thus permitting the escape of some positive ions, with a resultant lowering of the electrical potential immediately about the point of stimulation. This constitutes the "local excitatory process". Unless the difference of potential set up by this local process exceeds a certain minimum there is no spread of the disturbance, and the membrane, if left alone, quickly returns to its former state of equilibrium. It is believed that stimuli too weak to produce active responses set up "subliminal" local potential differences of this kind—a belief which derives confirmation from the fact that if such stimuli are repeated with sufficient frequency their effects pile up, or summate, until an active response is set off.

Whenever the local excitatory process is of adequate magnitude it sets off in the axon of the cell a propagated disturbance known commonly as a nerve impulse. This is thought of as primarily a more deep-seated upset in equilibrium than the local process that sets it off, and one which spreads rapidly from the point of stimulation to adjoining points on the axon. The necessary result of such an upset of equilibrium is a shift of the physico-chemical state of the system to a new equilibrium. This second equilibrium must be established in order that the process of shifting can come to an end. The precise nature of the influence causing the shift of equilibrium at one point to adjacent points is not known. The most plausible explanation suggested is that the potential difference attending the equilibrium shift causes a movement of ions between the region in activity and the adjoining inactive region, the movement being of sufficient intensity to upset the equilibrium in the inactive region. Whether ionic movement or some other factor is responsible, each region as it comes into activity passes the effect on to the inactive region adjacent to it.

A fact of great importance in the analysis of nervous functioning is that different classes of receptive dendrons exist, differentiated from one another by minute but definite differences in the time relations of absolute and relative refractory periods and also by differences in the speed with which the disturbance progresses along the dendron. These differences are in all probability important factors in determining the choice of paths followed by particular disturbances over the nervous system as a whole.

It is clear that the nerve cells have a more or less fixed reaction point; they respond only to stimuli above a certain fixed magnitude if they are in normal condition. That the explanation of their functioning is exceedingly more intricate than the ingenuous picture offered is obvious if one glances at Tioland or any advanced description of the neuro muscular mechanism. However in the present endeavor it is sufficient to focus attention upon the commonly accepted working principles of the bewildering activities of the cerebrospinal system. The normal condition of the nerve cells is subject to disturbance and change; cells may react to weaker stimulation and, conversely, strong impulses may be unable to stir them. But as in electro-mechanics, there is a minimal intensity of current necessary to produce certain effects, so in the human body there is a normal strength of impulse needed to convert the potential energy present in the nerve plasm. This reaction point at which the upset in energy equilibrium occurs has been termed the threshold of functional activity. That this threshold can be raised or lowered in the emotional and motivating centers is a well-known condition following the administration of certain drugs like cocaine, ether, chloroform and associated chemical substances. Much the same condition is achieved in the human being by the disturbance of the internal chemistry occasioned by the defective functioning of the endocrines. Hypothyroidism for example causes the nerve cells to be abnormally stable or phlegmatic and impairs their response to ordinary impulses and influences. In a similar manner, an excessive activity of the suprarenal glands in times of peril makes certain cell groups abnormally responsive by lowering the threshold of functional activity. Many neuron groups and nerve cells are therefore extraordinarily sensitized or desensitized by the excess or the

deficiency of the ductless gland hormones in the blood stream and the lymph. Loeb has found that his doctrine of tropisms is conditioned largely by the subtle influences of the endocrines generated naturally in the body of an organism; and in certain cases the tropism has been radically transformed by a changed chemical condition of the body. However, the glandular substances, like certain toxins, act selectively on various nerve centers. An excess of thyroxin oversensitizes certain specific groups that control definite activities of the human machine. Chronic overabundance of adrenalin disturbs the threshold in other centers and the same is true of the secretions from the pineal, the pituitary, the interstitial and other glands, each having its own selective activity and controlling vital parts of the animal or human mechanism. Accordingly, a disturbance of several glands or a pluriglandular involvement will elevate or depress the thresholds in numerous essential parts of the nervous organization creating a complex situation that is moderate or acute depending upon the degree of chemical disbalance. In this way the chemical forces of the body as supplied by the glands determine more or less profoundly the nature of its character and behavior. Since the disturbances of the glands and their chemical output are subject to endless degrees of gradation, one can readily appreciate how the infinite variety of human beings and their interminable variations of conduct, adaptitude, personality and agility are resultant. For example a murderer may conceive an enmity for an individual who has frustrated his efforts or who has done him a real or fancied injury. The concept of killing his enemy develops in his mind. Nearly everyone has had similar experiences—such as suicidal intent—and with similarly false conclusions. The normal individual of society rejects the idea as quickly as it is presented, since in a short time his anger abates and his view of the situation becomes less warped and more rational. But the potential murderer is disturbed in his glands, neuron and nerve groups. The concept of killing is followed rapidly by another concept of the mode of executing his plan. The plan takes on sharper definition and sweeps in the concepts of concealment and escape. At the same time, perhaps, an intense conflict ensues between the contentions of his emotions and

the inhibitions of the higher centers. But ultimately the idea of murder fully possesses him; he strikes his blow and tries to divert suspicion from himself. But not until after the crime is perpetrated does his emotional strain subside. The deed of homicide, as many killers of this type have explained, gives him relief from the intense pressure of an obsession.

This case illustrates that hypothetically at least there is a neutral point at which there is no flow of feeling and no resulting action. If a stimulus causes a lowering of cell thresholds then there is possible the creation of a wave of feeling so intense that a pathological condition develops which is conducive to criminal action. But it does not follow that emotional instability—the by-product of an unbalanced glandular condition—inevitably culminates in wrongful action. The gland disturbance of the individual may be such as to render him meek and retiring and probably incapable of crime. On the other hand a domination of the suprarenal and the interstitial hormones may dispose the sufferer to be violent and reckless.

Again, environment may interpose to modify the character and the behavior of the individual. It may deleteriously affect the mother and cause the birth of a defective person. Although of secondary value as a factor, the personal environment of the individual acts through its medium of the many concepts or mnemonic data in the storehouse of his memory of experiences as a deterrent or an accelerator to the emotionally defective in his subsequent actions and behavior. If born into the world with a stable, emotional equipment and a harmonious endocrine system, the individual will most likely be indifferent to unsocial influences and adverse environmental conditions. In other words, the irregular and wrongful conduct of a person is attributable to his malevolent associations and unwholesome environmental circumstances, if an originally unstable emotional condition and defective glandular functioning can be predicted. In the causal chain of misbehavior and crime, the ductless gland system is posited as the first link to which others may or may not be welded depending upon his environmental experiences.

VII

Punishment

Criminal law involves the most insistent and fundamental of social interests. If, on the one hand, organized society presupposes peace and order, security of morals and institutions, and the conservation and the intelligent use of social resources; on the other hand, it no less presupposes free individual initiative, as the basis of economic progress, free criticism, as a condition of political advancement, and free mental activity, as a prerequisite of cultural development. Moreover it demands that the individual man be able to live a moral and social life as a human being. But these claims continually infringe upon the interest in the security of social institutions. And not infrequently they conflict with the paramount interest in the general security itself.

As a result, the history of criminal law discloses a continual movement back and forth between extreme solicitude for the general security and extreme concern for the individual life. The former leads to a minimum of regard for the individual accused, and to reliance upon summary, arbitrary and administrative punitive justice. The latter develops into a minimum regard for the general security and the stability of social institutions, and to reliance upon carefully regulated judicial punitive justice, constrained at all points by checks and balances, or even by trifling technicalities.

But the modern school of criminology has developed theories that react against the severity and the callousness of the older order and foster a more sympathetic attitude toward the individual delinquent. This change in method is especially manifested in a justification of the theories of punishment. In any developed legal system sanction is added to legal precepts by punishment, either by a reinstatement of things to the position in which they were before disobedience or by an interference to prevent disobedience. The motives behind such punishment are several; retributive, deterrent, preventive and reformatory. According to the retributive theory, the offender expiates his

offense through punishment and suffers retribution for the evil which has been done in order to vindicate the principle of justice which has been violated. Such a theory predicates that the individual doing a moral wrong commits the reprobated act freely and at the time of its commission is mentally qualified to judge the character of his act and actually intends to commit it. A question arises, therefore, whether a true system of ethics can require, or even permit, the existence of a right to inflict pain or demand retribution in an expiative way. Can there, in other words, be any rational ground for declaring that justice demands, under any conceivable conditions, that pain should be inflicted when no possible future good can result? It is interesting to observe the views of Kant upon the retributive theory of punishment. "Judicial punishment can never be administered merely as a means for promoting another good, either with regard to the criminal himself or to civil society, but must in all cases be imposed only because the individual on whom it is inflicted has committed some crime—the penal law is a categorical imperative; and woe to him who creeps through the serpent-windings of utilitarians to discover some advantage that may discharge him from the justice of punishment or even from the due measure of it according to the Pharisaic maxim; 'It is better that one man die than the whole people should perish'. For if Justice and Righteousness perish, human life would no longer have any value in the world."

Kant accepts the doctrine of lex talionis as one to be applied without reservation. However, its acceptance makes it impossible for the courts to gain that knowledge which the theory demands for the just apportioning of penalties. When reduced to its proper meaning, retribution demands that the offender bear the legitimate consequences of his conduct, that is legitimate from the ethical viewpoint. This imposes upon a legal tribunal the almost impossible task of the determination of the degree of moral responsibility. Conditions of knowledge, of heredity, of environment, of physiological abnormalities, and of facilities for moral development must be searched before an approximate estimate can be made of the simplest act. The question of moral responsibility in the criminal, in view of its treatment by modern thinkers,

embarrasses considerably the complacency and the certainty of the tenets of the retributive theory. Garraud gives the following résumé of the modern theories of the basis of such penal responsibility:

(1) Classical theory, moral and social responsibility, based upon the notions of obligation, free will, and personality; (2) Modern theories, (a) mere social responsibility, based upon the notion of the defense of the social organism, (b) Social and moral responsibility without the suppression of free will, through real and personal identity and through social similarity (Tarde) and through the normality of the deed (Liszt), (c) Social and moral responsibility, but reduced to a simple noumenon. Although the outline is not complete, it is believed that the theory advanced by Tarde in his "Penal Philosophy" is more or less generally accepted. This thinker believes that the affirmation of free will is a contradiction of science. Although he does not accept the prevailing notion of society as an organism, he argues that a system is necessary having a moral basis and characteristic animated by modern science. Any retributive theory of punishment looking wholly to the past and ignoring the modern redefinition of responsibility must be rejected.

At the same time, a repudiation of the older theory of punishment compels the acceptance of a utilitarian doctrine which requires that punishment to be justly imposed must have for its aim the realization of some future good. These utilitarian theories differ from one another according to the nature of the good sought. Sometimes the punishment is inflicted in order that potential law-breakers may be dissuaded from crime. Again the aim of the punishment is to prevent a repetition of the offense by surveillance, imprisonment, or execution of the criminal. In addition, moral reformation of the delinquent with the aim of awakening his conscience and changing his disposition has animated the policies of many modern penologists. As to how far it is possible either to educate or reform the criminal by punishment, is a matter upon which opinions vary greatly. Occasionally, with the true nature of his act clearly defined, the conscience of the offender, so far as it is not already blunted, will exercise its controlling power to prevent a repetition of the same

or similar conduct. But directly to stir the conscience by a series of pains, if not impossible, is certainly difficult. Hegel felt, however, that the penitential system should arouse the comprehension of the wrongdoer to the nature of his act and thus stimulate his cognitive faculties, rather than increase his sense of moral obligation; should show him what is right and what is wrong, rather than teach him that he should do what is right and avoid doing what is wrong.

But these utilitarian theories are not mutually exclusive. It is rationally impossible to select any one objective and declare that in any penitential system that one should yield the sole motive for its enactment and enforcement. If reformation were the exclusive result sought it would be incumbent upon the court to release from custody all of those confirmed recidivists for whom reformatory influences have been futile. If absolute prevention were the sole aim of a theory of punishment, then capital punishment or life imprisonment would be the normal penalty; for in no other way could a repetition of the offense by the convicted individual be avoided. Similarly, deterrence, if solely relied upon, would cause an abandonment of all reformative efforts since erring mankind would yield only to the strictness and the severity of punishment.

When considered separately, it is evident that the utilitarian doctrines of punishment are just as defective as the retributive theory even though collectively they are free from the necessity of apportioning punishment to the degree of moral guilt. But when considered as different phases of a supreme idea, the social welfare or the common weal, the theories of reformation, deterrence, education and prevention successfully avoid the necessity of adjusting punishment to guilt and leave to the laws and the courts the expression of judgments according to the practical exigencies of each case as determined by the social need.

However, the conclusion to be derived from a cursory consideration of the theories of punishment is their apparent failure to solve the problem of crime. It is seen that the older theory of retribution is predicated of a classical freedom of the will. It has been argued that the deterrent and reformatory theories of punishment also carry with them a belief in the freedom of

action. But if behavior results from the presence of certain motives and the application of rewards or punishments, then actions of a certain character would really always happen and seemingly vindicate the rationality of ordinary penal theories. Obviously the classical belief in freedom and in the legitimacy of the theories of punishment is not well founded.

Furthermore, the notion that the equity of punishment depends upon the responsibility of the offender and the admission of moral consciousness that his previous misconduct was freely chosen sets up consequences that are difficult to reconcile with the libertarian view. For no matter what the character of the individual was in the past, it is possible upon the doctrine of freedom for him to transform his character completely and thus anomalously apply punishment to him for a previous period of his life and deny to him the justice of forgiveness for what he is at present. Punishments from a libertarian view then become worthless, since a punishment cannot prevent an individual from becoming a person of whatever character he chooses or from committing offenses of whatever moral quality he determines to prefer. Moreover the argument is often advanced that it is impossible to reconcile a denial of freedom with a belief in the reality of remorse or penitence. But no individual can exhaust the concealed elements in his personality by introspective analysis. The very presence of the feelings of remorse and penitence argues the existence in the individual of motives to good conduct which, if acted upon and allowed full scope and development, may produce a complete change of character. Contrary to James, determinism is not a message of despair. The feelings of remorse and penitence in the agent are but the natural and logical consequences of the act which the remorseful individual deplores. In a consciousness that is sufficiently moralized such feelings follow the committing of certain acts as inevitably as pain in the physical world follows the violation of a natural law. To regard a person as a responsible agent is merely to believe that he possesses a stability and a permanence of character.

But the objection may be advanced that, in spite of the discoveries of science, the human mechanism remains as much a mystery as ever. Admittedly, science cannot solve the mysteri-

ous; it merely pushes it back a little farther, step by step. But the old laws of behavior have not been repealed even though they do not apply directly to the new field of scientific achievement. The old theories of punishment are obsolescent and fruitless since they do not strike at the causes of misbehavior. As Jennings says,

> "The statement that the laws of nature are immutable must not be construed to mean that new laws shall not be exemplified as new conditions arise . . . The desires and aspirations of humanity are determiners in the operation of the universe on the same footing with physical determiners."

Crime commissions, legislative committees, lawyers, sociologists, and others are inquiring, deliberating, and issuing recommendations. A recent report, the Missouri Crime Survey, reads aliunde "—the existence of personal responsibility was taken somewhat for granted, although as the reports show, especially the one on medical relations, that we were not unaware of causes beyond the control of the individual". Consequently, any remedial program to be formulated in view of the newer psychological and medical knowledge must of necessity be conjectural and tentative.

It would unquestionably include the element of indeterminate sentences. The trial judge would have no discretion and the laws of the state would provide no definite terms or limitations according to the offense committed. The release of the prisoner would be left entirely to a board of technicians able to predict, with reasonable accuracy, his future conduct.

In such a plan, a central detention hospital would be an essential feature. In it the individuals would be practically imprisoned but also subject to investigation by social, clinical and laboratory methods. The more refractory inmates would be retained permanently; others, less delinquent and more amenable to a corrective regimen, would receive an assignment of compatible duties under the surveillance of trained attendants.

True segregation of the novices in crime from the confirmed recidivists, adequate facilities for compulsory medical treatment, a mode for an easy transition from institutional to community life, a perfected system of parole, a regimentation of the incor-

rigibles, a rational application of the principles of eugenics and sterilization—all would be desirable elements in the administration of social justice when the problem of anti-social behavior is pathological in cause and nature.

The comprehensiveness of such a program cannot as yet be detailed and its intangibility must be left unresolved. However its major interest is directed to nervous ferment, gland derangement, defective physical equipment and distorted mental powers. And since mental activities are natural functions of natural bodies, they become the real determiners of conduct and character. They are as integral a part of the biological machinery of regulation and control as are the reflexes. If the body is a defective mechanism, if its internal chemistry is disturbed and erratic, then the function of mental activity is expressed in actions that contravene the norms of an accepted ethics. Determinism becomes then not a logic of despair but a message of deliverance. As Herrick aptly describes,

"With better understanding of the mechanisms of erosion, of species formation, of thinking, of desiring and of aspiration, we see that all of these things are determiners in a unitary mechanistic cosmos. We have a concept of emergent evolution that has nothing mystical about it. We need no categories which are not related in cause and effect series with inorganic mechanisms to embrace all there is in life and in human nature. The unity of the natural order remains unbroken. But we do need to recognize that the vital patterns of combination of simpler inorganic processes are different and that the conscious patterns are different from the unconscious."

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